

REMARKS

Claims 1, 5 and 8-19 are all the claims pending in the application.

In Paragraph No. 6 of the Office Action, claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as containing parenthetical language which is said to render the claim indefinite.

Applicants respectfully traverse the rejection. Applicants wish to point out that in the Amendment of December 11, 2003, claim 1 was amended to delete the parenthesis. Accordingly, there is no “parenthetical language” in claim 1. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In Paragraph No. 9 of the Office Action, claims 1, 5 and 8-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mukaiyama et al (U.S. Pat. No. 4,737,526).

Applicants respectfully traverse the rejection for at least the following reasons.

The present invention relates to a fluorine-containing elastomeric polymer, i.e., a terpolymer obtained by copolymerizing ethylene, hexafluoropropylene and vinylidene fluoride in a specific ratio. The polymer has an elastomeric property and sufficient amine resistance while maintaining heat resistance, oil resistance and chemical resistance nearly equal to those of conventional fluorine-containing rubbers. See page 7, lines 1-5 and page 6, line 25 to page 7, line 1 of the present specification.

On the other hand, Mukaiyama et al relates to a crystalline fluorine-containing polymer (claim 1). Examples 21, 23 and 26-31 describes a vinylidene fluoride (VdF)-

RESPONSE UNDER 37 C.F.R. § 1.114(c)
U.S. Appln. No. 10/018,367
Attorney Docket No. Q67396

hexafluoropropylene (HFP) copolymer. In Examples 28-31 in which the compositions are described, the amount of HFP in the range of 5 to 8% by mole is extremely small.

As described on page 8 of the present specification, lines 8-9, “when the amount [of HFP units] is too small, elastomeric property is lost.” The composition ratio of HFP units that give side chains to a polymer influences the elastomeric property [crystallinity] of the polymer. For this reason, in Mukaiyama et al, the polymer having few HFP units has few side chains and therefore is a crystalline polymer, but not an elastomer.

In contrast, ethylene units do not give side chains to a polymer. Therefore, no matter how much ethylene is copolymerized with a crystalline HFP-VdF copolymer, the crystallinity will not decrease and the elastomeric property will not be exhibited.

Mukaiyama et al merely describes that ethylene can be copolymerized with a crystalline polymer such as a HFP-VdF copolymer but does not describe a composition ratio. Therefore, Mukaiyama et al does not anticipate or render obvious the elastomeric polymer of the present invention comprising HFP, VdF and ethylene in a specific composition.

Furthermore, in the present invention, ethylene is copolymerized in a specific ratio to impart amine resistance. Mukaiyama et al does not describe or suggest this feature of the present invention.

In view of the foregoing, Applicants respectfully submit that the present invention is not obvious over Mukaiyama et al and the rejection should be withdrawn.

RESPONSE UNDER 37 C.F.R. § 1.114(c)
U.S. Appln. No. 10/018,367
Attorney Docket No. Q67396

In Paragraph No. 11 of the Office Action, claims 15-16 and 18-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mukaiyama et al in view of Arcella et al (U.S. Pat. No. 5,354,824).

Applicants respectfully traverse the rejection because the rejection of claim 1 from which claims 15-16 and 18-19 depend secondarily has been overcome for the reasons set forth above. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In Paragraph No. 12 of the Office Action, claim 17 was objected to as being dependent upon a rejected base claim.

Applicants respectfully traverse the objection because the rejection of claim 1 from which claim 17 depends secondarily has been overcome for the reasons set forth above. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the objection.

In view of the above, reconsideration and allowance of claims 1, 5 and 8-19 are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.114(c)
U.S. Appln. No. 10/018,367
Attorney Docket No. Q67396

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Fang Liu / By Joseph Ruch
Fang Liu
Registration No. 51,283
Reg. No. 26,577

Date: July 9, 2004